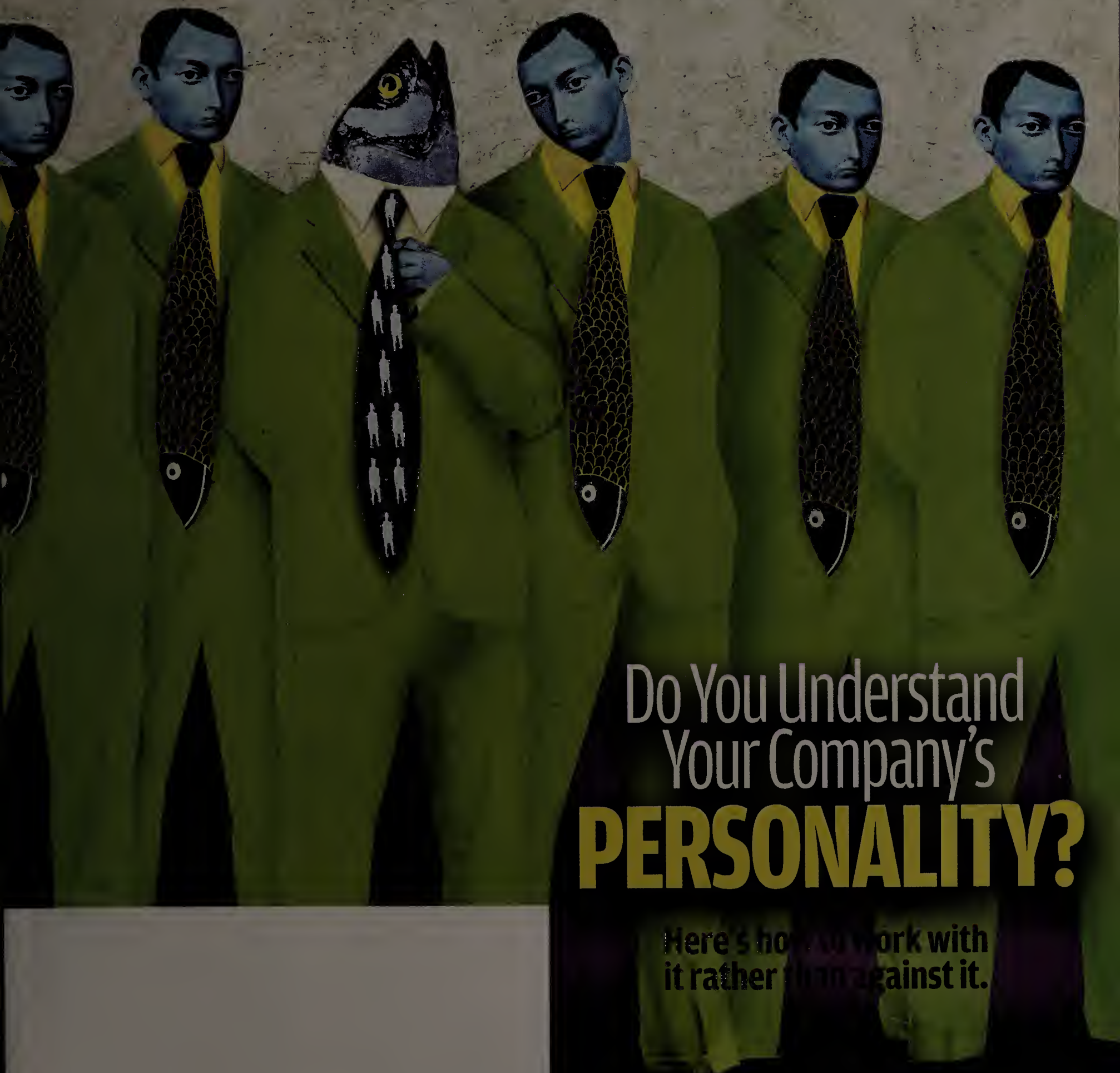


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INTO BIOMETRICS

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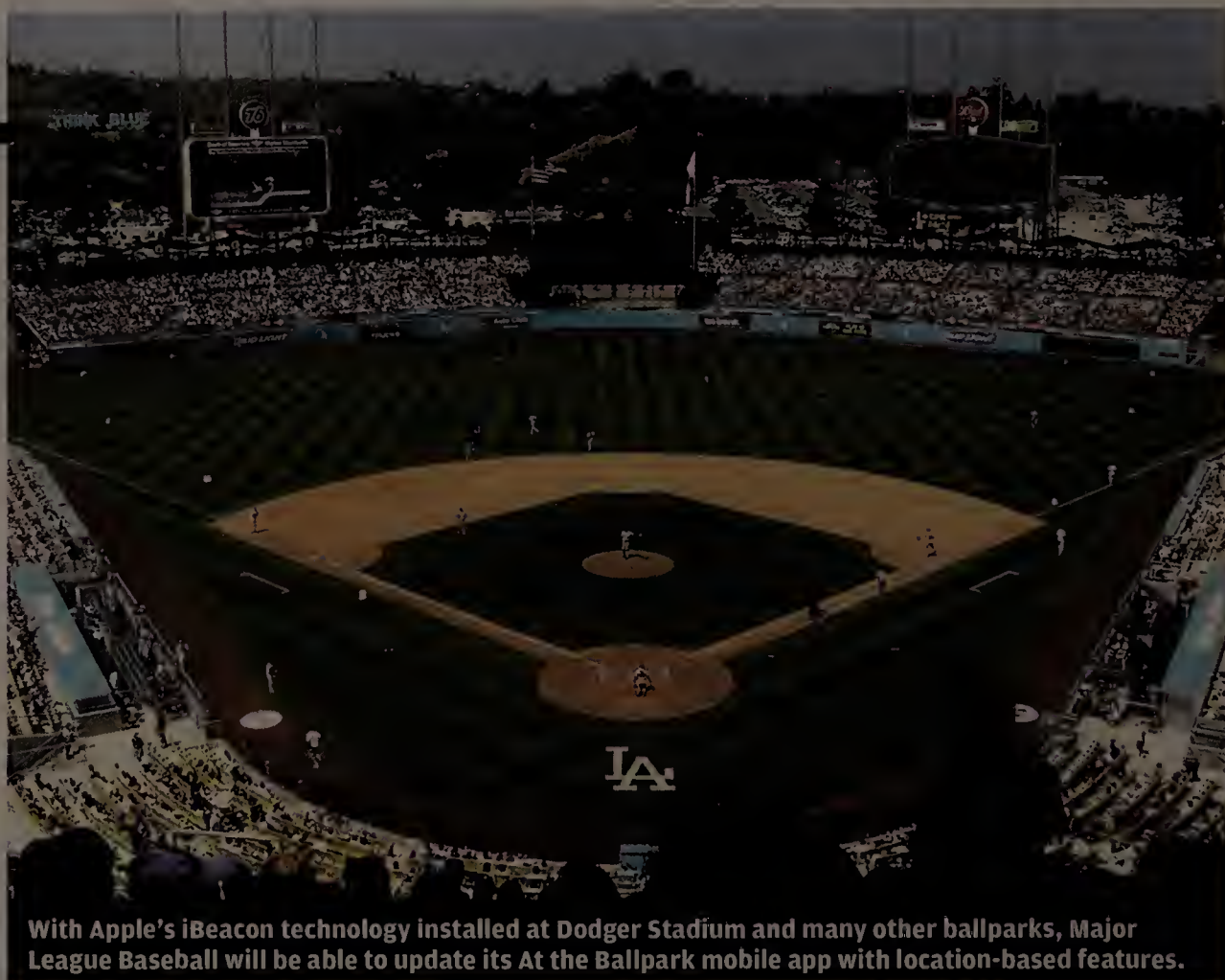
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With Apple's iBeacon technology installed at Dodger Stadium and many other ballparks, Major League Baseball will be able to update its At the Ballpark mobile app with location-based features.

FREDERICK DENNSTEDT

MOBILE APPS

MLB, Stores Make Location-based Pitches

EAGER TO LEARN MORE about what customers do on their premises, a growing number of businesses that cater to the public are hoping to gather data from visitors' mobile phones.

Major League Baseball, for example, announced that it has installed Apple's iBeacon technology at two ballparks — Dodger Stadium in Los Angeles and San Diego's Petco Park — and that roughly 20 more stadiums are slated to get the technology by opening day on March 31.

The goal is to gather new information about fans' habits, like the volume of foot traffic and the amount of time spent in certain areas, and then send promotions to their mobile phones.

MLB said that it plans to enhance its At the Ballpark mobile app with new features that would work in conjunction with iBeacons installed throughout the parks. The features

might include digital videos that become available when people visit certain areas of a stadium, or coupons that appear on people's phones when they walk into the souvenir shop.

An MLB spokesman said it's too early to say what sorts of data might be gathered from fans.

Meanwhile, jeweler and fashion retailer Alex and Ani said it has deployed an iBeacon-based system from Swirl in more than 40 stores nationally to push offers to shoppers and track their activity in the stores. The company said it gathers data only from people who have its app and have opted in.

However, privacy concerns could derail such programs. Nordstrom once followed Wi-Fi signals from people's phones but ended the project after some shoppers reacted negatively.

— Zach Miners, IDG News Service

INTERNET ACCESS

Net Neutrality Ruling Spurs FCC To Set New Regs

The Federal Communications Commission will not seek further judicial review of a January court ruling that struck down the agency's Net neutrality regulations, but it does plan to issue a new set of rules covering Internet service providers.

In 2010, the FCC adopted the Open Internet Order, which prohibited ISPs from blocking certain services or charging content providers for network access. But the U.S. Court of Appeals for the District of Columbia Circuit found that the FCC lacks the authority to prohibit broadband providers from selectively blocking or slowing Web traffic.

In a prepared statement, FCC Chairman Tom Wheeler said the agency will propose rules that "meet the court's test for preventing improper blocking of and discrimination among Internet traffic, ensuring genuine transparency in how Internet service providers manage traffic, and enhancing competition."

Because of the ruling, ISPs can now charge more to content providers, such as video streaming services, whose users consume large quantities of data. ISPs have long held that they should have the

right to offer tiered service so content-heavy sites would have to pay more

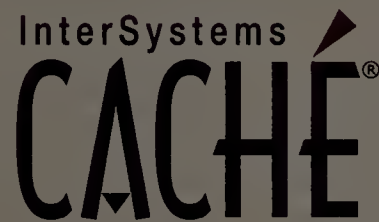
for network access.

The FCC will propose its new rules by early summer.

— NANCY WEIL,
IDG NEWS SERVICE

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HEADS UP

BETWEEN THE LINES

By John Klossner



PROCESSORS

Itanium Fades as New Xeon Chip Debuts

THE WRITING IS ON THE WALL for Intel's high-end Itanium processor line with the recent launch of the chip maker's 15-core Xeon E7 v2.

Itanium chips are found mostly in Hewlett-Packard servers running the HP-UX, OpenVMS or Linux operating systems. Intel is positioning the Xeon E7 v2 chip, based on the x86 instruction set architecture, as a high-performance alternative that can run both Windows and Linux.

The latest Xeon E7-4800 v2 chips will be Intel's fastest server processors to date.

The chips are designed for use in settings that need high-uptime servers and deal with large data sets to make real-time decisions.

With the advent of the E7 v2, Itanium is a step closer to meeting its eventual end. "Itanium is in maintenance mode," said Jim McGregor, an analyst at Tirias Research. "You keep supporting because you contractually have to."

Intel's latest Itanium chip, code-named

Poulson, was released in late 2012. The family's next chip, code-named Kittson, is due for release in 2015, and that may be the last in the line. The company has already scaled back its plans for Kittson, saying it would be made using the older 32-nanometer manufacturing process. The chip was originally going to be made using the latest 22nm process.

Customers are better off making the switch to x86, which has taken over in servers and offers strong performance, McGregor said.

Itanium's death knell sounded when Oracle determined in 2011 that the chip "was nearing the end of its life" and decided to stop supporting the architecture. Microsoft has also stopped software development for Itanium.

But Intel isn't giving up. Itanium remains a critical part of its portfolio, said Patrick Buddenbaum, Intel's director of enterprise segment marketing. The company will continue to offer Itanium for customers running Unix-based systems and supported application stacks.

— Agam Shah IDG News Service

Micro Burst

SanDisk has unveiled a microSD card with

128GB

storage capacity, a massive leap from 128MB in its first card 10 years ago.

SECURITY

Target Attack Reveals HVAC Vulnerabilities

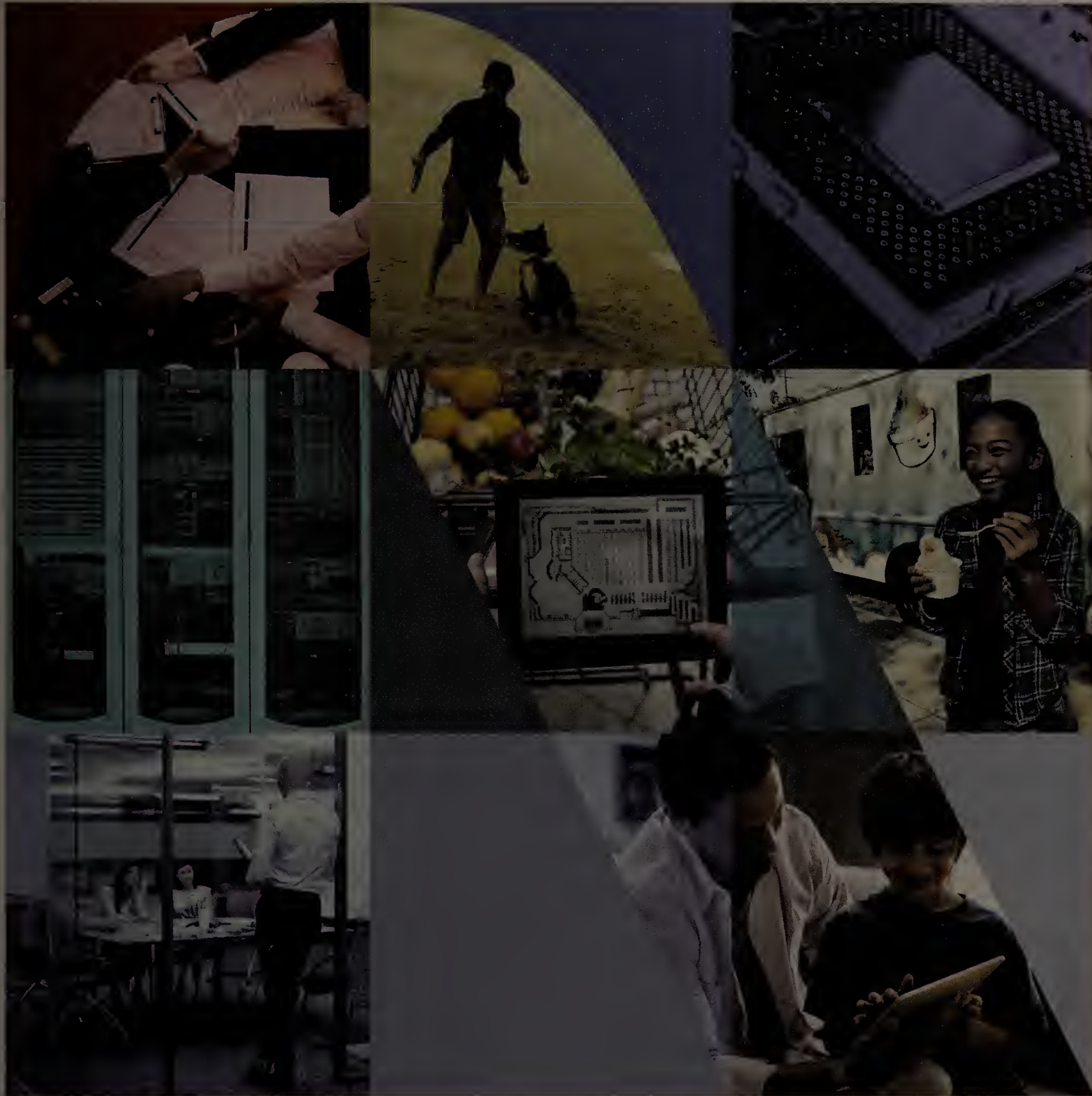
The massive Target breach led to revelations that many companies use Internet-connected heating, ventilation and air conditioning (HVAC) systems without adequate security, giving hackers a potential gateway to key corporate systems, a security firm warned.

Qualys, a provider of cloud-based security services, said its researchers have discovered that most of the nearly 55,000 HVAC systems connected to the Internet over the past two years can be easily exploited by hackers. In Target's case, hackers stole login credentials belonging to a company that provides the retailer with HVAC services.

HVAC systems connect to networks at all kinds of enterprises — retailers, government agencies and even hospitals, according to Qualys. HVAC vendors and other third parties often have remote access to their customers' systems for administrative and support purposes.

Companies tend to be lax about HVAC security because they have no idea that HVAC systems can provide entry to corporate networks, said Billy Rios, director of intelligence at Qualys, in an email. For instance, he said, many HVAC management firms use one password for systems belonging to multiple customers.

— JAIKUMAR VIJAYAN



C-LEVEL EXECUTIVES ARE ALL COMING TO THE SAME CONCLUSION

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A visitor walks near the receding waters at Folsom Lake, a reservoir in Northern California that is at 17% of its capacity.

California Fighting Drought With Tech

Big data, cloud computing, sensors and even a hackathon all play a role in efforts to deal with a historic water shortage. By Patrick Thibodeau

CALIFORNIA IS IN THE MIDST of its worst drought in more than 100 years, and though there are intermittent storms, experts say there's no end in sight.

Conserving water has never been more important, and several companies and experts in Silicon Valley are working to develop new technologies and processes to help. Cloud computing and big data analytics, which weren't around during the last major California drought between 1987 and 1992, are among the technologies leading the way.

The East Bay Municipal Utility District, for instance, is using new data analysis technologies to identify households that use a lot of water and help them find ways to cut back.

In a yearlong pilot program, the Oakland-based utility is analyzing the water usage of 10,000 of its 650,000 customers with a tool developed by venture-backed WaterSmart Software.

The utility uses the data collected to issue reports to participants with recommendations for conserving water based on usage history, household characteristics and the season of the year.

The effort has helped reduce participants' water consumption by 5% via behavioral changes, according to a study of the program. The utility said such reporting systems could "go a long way" toward helping the state meet its goal of reducing water usage by 20% per capita.

WaterSmart delivers its tools via a software-as-a-service (SaaS) setup. A utility exports its usage data to the system for analysis; no integration work is required, said Peter Yolles, CEO and founder.

Meanwhile, Brinkley Warren, a Fulbright fellow and an entrepreneur, last month began organizing a hackathon to bring together people with diverse skills

to "approach the [drought] problem from new perspectives." He said the goal of his "Hack the Drought" initiative is to connect innovators and other creative types with water management experts to frame the problem and then form teams to find solutions.

Out of this process, Warren hopes innovative ideas and prototypes will emerge that find support and corporate sponsors. "The idea is to find other people who are much better than me to become leaders and go forth with it," he said.

The need for innovation in the water technology market was identified by a team of people who, in 2007, formed Imagine H₂O, a San Francisco-based nonprofit that runs water technology competitions and provides a platform for connecting winners with investors and customers. COO Scott Bryan said Imagine H₂O is "trying to address the market failure in the water sector." It doesn't have equity in the startups it helps, he added.

Bryan said the drought is bringing attention to the water technology issue, but he acknowledged that the lengthy development process makes it tough to get a solid return on investment.

He did note that one winner of an Imagine H₂O competition, a company called Leak Defense, is planning to release a system for detecting water leaks in the second quarter. The product is similar to a smoke detector. It will include a heating element and temperature sensor that is attached to the outside of an intake pipe to detect the flow of water, said Leak Defense CEO Scott Pallais.

The system is designed to work with home security systems or apart from them, and it can use a home's Wi-Fi network to alert a homeowner to a potential issue. ♦



The idea is to find other people who are much better than me to become leaders and go forth with it.



Prospects Wane for Office on the iPad

Analysts say the longer Microsoft waits to ship versions of Office for iOS and Android, the less likely it is that such a move will pay off. By Gregg Keizer

CONVENTIONAL WISDOM has long held that Microsoft will make a financial killing when it launches versions of its Office software suite for Apple's iPad and tablets powered by Google's Android mobile operating system.

After former CEO Steve Ballmer's pledge last fall that Microsoft would unhitch Office from Windows and make the productivity tools, in some fashion or another, available on rival tablet platforms, many pundits and analysts quickly came up with back-of-the-envelope estimates that indicated that the move would open a mother lode for Microsoft.

Just a few months later, though, some analysts are growing impatient, and now say that the longer Microsoft waits to unveil Office for the iPad and Android, the less chance it will have to cash in — in the short run or over the long term. And some observers say that Microsoft officials appear to have dialed back their enthusiasm for Office on the

iPad since Ballmer left and Satya Nadella was chosen to replace him.

"The expectation [that Microsoft will offer Office on the iPad] is realistic, but what if Microsoft ships Office [on the iPad] and no one cares?" asked Michael Silver, an analyst at Gartner. "That's more and more likely for every day they don't."

From Silver's perspective, Microsoft has already squandered an easy opportunity to make Office the de facto standard productivity suite on tablets, as it has long been on traditional PCs.

"Microsoft risks relevancy the longer they refuse to play in the market" for non-Windows tablets, he said.

Unlike the desktop/laptop market, where Office faces virtually no competition and has a stranglehold on corporate users, the iOS/Android tablet market has had plenty of "good enough" alternatives to Office for years, Silver noted. The bewildering array of options includes "at least 30 different products," led by Apple's free iWorks suite and Google's Apps for Business, he said, describing the market as "pretty fragmented."

"Microsoft needs to decide what they want to do when they grow up," Silver added.

Meanwhile, Tami Reller, executive vice president of marketing at Microsoft, last month sidestepped questions posed at a tech conference about Office on non-Windows platforms, using the

word "thoughtful" to describe the company's planning. Some experts dissected Reller's comments and concluded that Microsoft was hedging, though others maintain that the company still plans to release an iPad version of Office by mid-year.

Ben Bajarin, an analyst at Creative Strategies, said he thinks Microsoft will release a version of Office for iOS and Android, but he wonders whether such an offering would be a huge hit — though quickly generating billions of dollars may not be the point.

"Launching Office on the iPad, or for any other mobile platform, is not a new-customer acquisition strategy, but rather one that supports existing customers," Bajarin explained, saying such a move would be "somewhat defensive" — meaning the company might do it primarily to avoid losing existing customers.

Bajarin argued that "it's Microsoft's responsibility to let customers that have paid a lot to use Office ... use it on any platform." ♦

Microsoft risks relevancy the longer they refuse to play in the market.

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THE Grill

Steve Betts

This CIO finds great value in social media tools that bridge a global company.

What's on your reading list? *The Phoenix Project: A Novel About IT, DevOps, and Helping Your Business Win*, by Gene Kim, Kevin Behr and George Spafford

If you retired tomorrow, what would you do? "Travel. There are loads of places I'd love to go."

What's your favorite place so far? "India. I love the culture."

Hometown: Bingham, near Nottingham, England

Two things most people don't know about you: "I can kick a soccer ball 100 times without it hitting the floor. And I had surrealist artwork exhibited in the Tate Modern gallery in Liverpool."



A **S GLOBAL CIO** at Aon PLC, Steve Betts has taken on some big IT initiatives. His team helped develop and deploy the company's Global Risk Insight Platform, which is used to mine data from nearly \$100 billion in insurance premiums. IT also helped develop Aon's health exchange offerings, which allow clients' employees to choose their healthcare plans. Betts also led the integration of IT operations following Aon's \$4.9 billion acquisition of human resources consultancy Hewitt Associates. Here, Betts shares insights he has gained during his three years in the global CIO role at London-based Aon, a global risk management, insurance and reinsurance brokerage and provider of HR services.

You've said "the world is drowning in data" and "making sense of it is the real challenge." What role does your IT operation play in that? Making actionable, value-creating insight is really what the challenge is, and IT plays a big part in it. It's really about creating the right environment and putting the right parties together



“There are technology elements that our business folks don’t know about, and it’s my job to bring those to the table and influence how we go to market.”

to get to that value-creating insight. So it’s a partnership with my business colleagues and with the analytics specialists. We’ve established the Aon Center for Innovation and Analytics in Dublin, where we have a focused team of data analytics experts. They partner with folks from my team both in terms of gathering data and sensitizing it in a set of tools and an external-facing dashboard that our clients and the insurance carriers leverage.

You’ve also talked about the power of enterprise social media tools. What’s your social media strategy?

It’s been a big focus for us, working with the chief HR officer around the whole talent and knowledge agenda. We established a number of capabilities, [such as] a people-finder application — think of it as an internal LinkedIn that helps our employees find others with the

right skills. Finding the right person across 65,000 employees is critical. We have instant messaging and point-to-point videoconferencing, and we’re in the process of rolling out Yammer, which [supports] real-time collaboration and dialogue around opportunities, innovation and so forth.

How do social media capabilities help your organization?

It connects colleagues around go-to-market or other areas where we’re trying to establish capabilities or innovate. In the past, we’ve had the same set of activities going on in different regions, different countries, and the challenge has been to connect the best thinking so we don’t re-create the wheel. This set of tools has been able to do that. If you have a client issue or you’re trying to deliver a product, you can search it or create a discussion thread and you can now get to colleagues across the globe who have that shared goal. What we’re seeing is there’s much more

teaming. It’s changing the flow from up the chain to letting the web of colleagues connect. It’s a much more agile way of connecting colleagues.

What is IT’s role in fostering connections? We’ve done a couple of things. We actually created a group that does report through HR specifically around this talent-knowledge-collaboration agenda. We work in very close contact with them to have some focus around that.

In terms of our approach to this and how I’ve positioned my team to help, we’ve taken a two-pronged approach: a top-down structure and a little “let it grow organically.” So how I’ve applied that is my chief architect has established a set of communities around the big innovation areas — mobility, cloud, analytics — and we’re driving a little more of a formal structure around getting the right folks plugged into those groups. At the same time, as I’m talking about Yammer, I’m on it all the time and I’m encouraging that grass-roots dialogue. You’ve got to have a little bit of both. If you try to drive it top-down, you kill the spontaneity and engagement around it. But if you have a just-in-the-wild type of exercise, you’ll have trouble getting the value out of it that you need.

What was the biggest challenge you faced when you moved up to the global CIO position? I took that role in the fall of 2010, which coincided with the acquisition of Hewitt Associates. That was a \$4.9 billion acquisition, the biggest in our history. The first challenge was to integrate seamlessly and bring together two pretty much equally sized, significant IT organizations, to bring more of that cohesion to the global capabilities. I had led the Aon-Benfield integration, so I had some experience, but the scale of the Hewitt acquisition was significantly greater. And I really needed to learn the HR consulting domain to be a really good partner to this business. It’s been a good learning experience for me over the past few years, but that was a challenge.

What was the biggest goal for yourself or your IT organization in this new position? Have you achieved it yet?

I don’t know if you ever really achieve it. We’ve made some significant progress toward the goal, and that goal is to really be a key element in how Aon goes to market. The goal is to be technology-driven, to be a partner at the table, to bring innovations and capabilities and technologies that influence our go-to-market strategy. There are technology elements that our business folks don’t know about, and it’s my job to bring those to the table and influence how we go to market. I feel that’s where I have a lot more to do. I don’t think we’ve achieved yet the level of impact I think we can get to. ♦

— Interview by Computerworld contributing writer **Mary K. Pratt** (marykpratt@verizon.net)

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OPINION

PAUL GLEN

Your focus is on getting your projects done, regardless of who is doing the work.

Motivating Mercenaries

TECHNOLOGY PROJECTS have long been staffed with a combination of employees and contractors, but now the balance is shifting toward heavier reliance on hired guns. If you're a manager who's being told to bring on contractors rather than hire full-time staffers, you need to be prepared for the implications of having a team that skews toward the temporary.

Your focus is on getting your projects done, regardless of who is doing the work. To get there, you'll need to motivate your people to perform, no matter where their loyalties lie.

OK, I can hear your objections already: "I pay contractors lots of money to deliver. Their motivation is their own business, not mine."

Sorry, but as much as you would like to think that you're hiring a subservient bag of skills that will respond to your every command, you're not. Contractors are people too, and you don't get out of the responsibility of managing and motivating them if you want to get your money's worth. Some challenges come with the territory:

- The traditional tools of motivation aren't available with contractors. They don't look to you for training, promotions, raises, bonuses or public recognition.

- Contractors focus on fulfilling their contracted obligations. Driving the entire project toward success is beyond their scope.

- They focus on serving you, the customer. That might not sound like an attitude that presents a challenge, but if you want contractors to really contribute to your project's success, you need them to think of themselves as part of the team. You get the most value when they focus their energies on what's most important for the project rather than whatever you, the boss, requested.

So how do you motivate contractors? In some ways, it's the same as motivating employees, but in other ways it's not. Here are a few pointers:

- Include them in all the project-related activities that employees in the same role would be included in. Keep them informed about relevant project and business issues. Involve them in the relationship with outside stakeholders.

- Explain your expectations of them in terms of the role you want them to fill rather than the deliverables you want them to produce. They will interact with the team very differently when you explain that you want them to serve as the QA lead on the project rather than defining their work as developing and executing a test plan. Then manage to the behavioral expectations rather than only to schedules and budgets.

- Acknowledge that you understand their concerns and aspirations as contractors. Let them know that you know that references and referrals are essential to their ongoing well-being. Also, assure them that you understand that predictability is helpful for them; commit to giving them as much notice as you can about when you'll need their services again or when you won't need them anymore.

Your success as a manager depends on your ability to locate, assemble, organize, manage and motivate people to deliver on your needs. As the workforce continues to shift toward contingency arrangements, you'll have to master the art of motivating people regardless of whether they are permanent employees or contract workers. Begin by recognizing that it's now an essential part of your job. ♦

Paul Glen, CEO of Leading Geeks, is devoted to clarifying the murky world of human emotion for people who gravitate toward concrete thinking. His newest book is *8 Steps to Restoring Client Trust: A Professional's Guide to Managing Client Conflict*. You can contact him at info@leadinggeeks.com.



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Do You Understand Your Company's

PERSONALITY?

Corporate culture might matter even more to your project's success than ROI does. Here's how to work with it rather than against it. **BY MINDA ZETLIN**

I**T EXECUTIVES AT SPLUNK** faced a challenge. They needed to provide training materials for employees who would be using a new security program. The \$268 million San Francisco company makes an application that collects machine data on everything from servers to elevators and heating systems. "A lot of our employees have Ph.D.s and are IT geniuses," says CIO Doug Harr. Rather than lay down the law with these folks about what they can and can't load on their desktop computers, IT gives them administrative powers and a few security guidelines. So when it was time to train users, Harr knew a run-of-the-mill how-to would be a bad idea. "We looked long and hard for training materials that would be acceptable to them," he says.



A lot of our employees have Ph.D.s and are IT geniuses. We looked long and hard for training materials that would be acceptable to them.

DOUG HARR, CIO, SPLUNK



Eventually, Harr and his team found some animated videos, mostly black-and-white and wry in tone, similar to some of Virgin America's safety videos. They worked, and as a further step, IT is now creating training videos of its own, featuring some of Splunk's own employees.

If that sounds like too much trouble for a simple training video that employees will spend only a couple of minutes watching, then you're missing an important point about IT in today's workplace: To be effective, you must deeply understand and fully engage with the culture of your organization.

"I've been with Gartner 25 years and had thousands of conversations, and it's very clear that technology is not the No. 1 challenge our clients face," says Ken

McGee, a research fellow at Gartner. "They get technology. The biggest issues are not technology but culture."

It's an issue that doesn't get enough attention, he says. For instance, when a new CIO arrives to reorganize IT, or a merger requires that two formerly separate operations combine, conditions are ripe for conflict. But many IT leaders ignore the danger. CIOs who would never put a networking novice onto an important infrastructure project assign people with limited human dynamics know-how to projects where culture clash is likely. "Then we're surprised there are so many problems," McGee says.

Dave Kelble, director of IT for the Abramson Center for Jewish Life, which provides residential and nonresidential services to seniors at its 72-acre campus in North Wales, Pa., considers organizational culture to be such an important topic that after getting an MBA in information systems, he went back for a master's in organizational dynamics. "It gives you a perspective you don't get in business school or technical school," he says. "I've found in the past the ROI calculations don't necessarily get a project accepted. You have to work with people to implement new technology."

'That's How We've Always Done It'

Whenever you hear phrases like "That's the way it is around here" or "That's how we've always done it," you're dealing with corpo-

How IT Can Help Convey CULTURE

T SPLUNK, corporate culture is "something we've taken a lot of steps to protect," says CIO Doug Harr. What the heck is a CIO doing protecting his employer's culture? It turns out IT departments are well positioned to do just that.

Situated in San Francisco's South of Market district, also home to *Wired* and the San Francisco Museum of Modern Art, Splunk's culture is rooted in the idea of disruptive, open-source technologies. Like some CIOs, Harr oversees facilities, so he's helped express that culture with brick-and-beam architecture, open-style seating, and furniture that can be configured for work either sitting or standing. The company further supports its free-flow culture by serving employees lunch on Mondays and breakfast on Fridays.

Harr also supports Splunk's culture by embracing a workplace where IT isn't expected to — and doesn't — exert much control over how employees use technology. "You have to check your ego at the door," Harr says. "I realized I couldn't just bring in hardware or software the way you do at a typical company, slap them down and say, 'Here's how we do things.'"

Instead, Harr and his team have embraced a growing use of cloud-based software that offers Splunk employees autonomy. "We're giving more and more control of Salesforce.com to our sales operations folks," he says. "I could hire eight business analysts for sales operations and still not understand it as well as they do."

His department took a similar approach when the marketing team sought a new application to capture customer references. "My development guy knew he could build it, but he [approached marketing and] said, 'Go ahead and see what you find,'" Harr says. "It was fun for them to get involved."

The product selected by the marketing team wouldn't have been IT's choice, but key elements, such as multifactor authentication, were in place. "It's secure and made them happy," Harr says. "When I get my guys thinking that way, stuff goes a lot better, given the way the world is going."

And that's the right role for IT, he adds. "There's tremendous potential we have as CIOs to embrace and even influence the culture of the company. If you include facilities, we're responsible for where they sit and what they touch all day," Harr says. "Even if you're not buying the chairs or building the walls, you supply the endpoint system everyone is touching. Doing that in a way that matches the culture is important. When you have a good culture, it's also fun."

— MINDA ZETLIN

rate culture. Tread carefully: Cultural impulses aren't always logical, and there's always more to them than meets the eye.

"I've been burned by culture occasionally," says Stephen Balzac, president of consulting firm 7 Steps Ahead and an adjunct professor of industrial organizational psychology at Wentworth Institute of Technology in Boston. Before his current roles, he spent 20 years as a software engineer, and that's when he learned the hard way about corporate culture.

In one memorable case, he was brought in to help a bioengineering firm revamp its operations. Begun in a garage, the company had grown quickly and now had large corporate clients. Its habit of releasing software rapidly and then fixing bugs as they cropped up had become a liability. "We had to turn into a professional software company," Balzac recalls.

The company's leaders told him they felt their all-day meetings were a time suck. So Balzac set about replacing the meetings with other forms of communication. He was then asked, "Why are you getting rid of the meetings?"

"Because you hate them," Balzac replied.

"But they work!" came the response.

The company's culture was so entrenched, Balzac realized, that even traditions that were unnecessary and unpopular couldn't be removed without trauma. "I learned to back off a little," he says. He instituted changes more gradually. And he gave management ample opportunity to try doing things the old way and confirm that it wasn't working before introducing a change.

Balzac sees culture as something akin to the body's immune system: It accepts what it recognizes and rejects the unfamiliar, useful or not. "Think of Apple with John Sculley," he says. "The whole company acted like it had a bad case of the flu."

What Are Your Values?

In many cases, examining the culture will reveal the true values of the organization. At kCura, for example, the culture is "team-oriented and personal, and we don't have a lot of politics," says CIO Doug Caddell. A provider of e-discovery software, Chicago-based kCura has about 360 employees. It's been growing rapidly, and Caddell says the company's culture helps foster growth. "It's a competitive advantage," he says, "and we see that when we're recruiting: kCura is really a desired place to come to work."

Before joining kCura, Caddell was CIO at a big law firm, and he says there's a stark difference between the two employers' cultures. "The partners in the law firm are all owners of the business, and everyone thinks they're in charge," he explains.

Before he worked at the law firm, Caddell had a job in state



Think of Apple with John Sculley. The whole company acted like it had a bad case of the flu.

STEPHEN BALZAC, PRESIDENT, 7 STEPS AHEAD

government, which had another culture entirely.

Each employer has different values, and that means they have different ways of communicating about IT. At kCura, "we're in a growth stage, post-startup, and we have improved technology platforms to allow us to grow forward," Caddell says. "As we go from a company of 40 people a few years ago to 360 now and probably 700 two years from now, our infrastructure needs to keep pace so it doesn't sag under the weight."

At the law firm, the biggest value was rapid delivery. "That was definitely a culture of 'We need it done now!'" he says. "A lot of that is client-driven, so there's nothing wrong with that." In state government, the value was lowering costs, he adds. "A big part of the conversation was the reduction of full-time employees. So you had to understand that culture of cost-consciousness and how that factored into IT conversations."

Culture also determines which projects get done, and how quickly. Kelble's previous employer was a venture capital-backed, midsize firm. "It was grow, grow, grow," he says. "It was short term. 'We've got to get this up and running, we're going to be growing 50% in the next quarter.'"

As is common with VC-backed operations, the firm was acquired, IT departments were merged, and Kelble needed a new job. "I went looking for a way to get out of the VC rat race," he says. The Abramson Center was not only a completely different environment, it had different values as well. It's "a different,

COVER STORY

caring culture, not only for patients, but also employees," he says.

Kelble was hired with a mandate to upgrade the Abramson Center's IT architecture, something the center's leadership knew was needed. "So far, even though it's a nonprofit and budgets are tight, they've listened to what I have to say," Kelble says. In fact, he notes, "I've been here just over two years, and I've made more infrastructure changes that will be capitalized over three to four years than I did in the five years I was at the other company."

That has changed Kelble's approach to the healthcare industry as a whole. "I take a longer view," he says. "Although the other company was also in the healthcare field, I look at what's happening in healthcare much more than I did before, as well as what's going to happen five and 10 years from now. I ask how I can build for the future."

IT Faces a Cultural Challenge

IT employees haven't always been skilled at integrating with the culture of their organizations, experts agree. For one thing, at many companies, there's a different culture in each business unit, location or functional department, and IT may well have a culture of its own. "IT professionals and business professionals look at things differently, which from time to time will result in a clash," McGee says.

"Good salespeople can be amazing at how they handle people and get stuff done," says Joe McLaughlin, who worked in sales before becoming vice president of IT at AAA Western and Central New York. "IT people are not that way."

In part, that's because of the skills that brought them to technology in the first place. "IT deals with things that have no feelings," Balzac says. "Because of that, it sometimes pulls

people who are more comfortable with things than they are with people." Working in IT can magnify this effect. "You're spending all your time with electrons and not emotions," Balzac says. "Switching to dealing with people can require effort."

Another problem is that learning about a company's culture takes time. Many IT people, already overloaded, may feel they have few spare hours for the "soft" activity of exploring a company's personality. But that's a mistake, experts say. "Invest that time, certainly in the beginning, to get immersed in how the organization works," Kelble advises. "Find the people who get things done, and find out how they do it. If the company has a picnic, don't show up, grab your burger, and head back to your desk. Become part of it, and learn everything you can about how everyone else does their job."

McLaughlin says, for both yourself and your staff, one great way to absorb the company's culture is to observe others doing their jobs. At AAA, he and the other top executives make a point of spending time in the call center and with the fleet. "You have to become a colleague with your peers. Go hang out in the retail store if yours is a retail operation," he says. "As an IT person, you always can make the excuse that, 'I'm here to see how the technology is working for you.' All of a sudden, you learn things you never would have otherwise — just because you're there."

Those things are worth learning. "Culture is a difficult thing to grasp," McLaughlin says. "There are cultures, and cultures within cultures. Call it whatever you want, but there's a personality in an organization. If you try to go against it, you do so at your peril." ♦

Zetlin is a technology writer and co-author of *The Geek Gap: Why Business and Technology Professionals Don't Understand Each Other and Why They Need Each Other to Survive*. Contact her at minda@geekgap.com.

CREATING CULTURAL CHANGE

SOME OF THE BIGGEST CHALLENGES for IT leaders arise when they're charged with making profound changes to the culture of their IT organizations. It's a process that

always rests on communication. "The fastest way to make any real change is to spend a lot of time talking to people, and that always seems to take too long," says Stephen Balzac, president of 7 Steps Ahead. When he coaches CIOs, he says, they often ask, "Why don't we just do it?"

"How has that worked for you in the past?" Balzac asks.

"People push back," the CIOs admit.

Then he explains that "it's not how fast you go, it's how smoothly you accelerate."

FROM FOUR TO ONE

Dale Danilewitz, CIO at AmerisourceBergen, an \$88 billion pharmaceutical wholesaler headquar-

tered in Valley Forge, Pa., is charged with centralizing what had previously been four separate IT operations at four separate lines of business.

At the same time, his mission is to increase the amount of IT services that are charged back to business units. To complicate matters further, the company has divisions across the U.S. and is expanding globally. Many IT operations and staffers are still embedded within business units.

To help far-flung IT people come together as a team, Danilewitz does a lot of communicating, by email, through the company's internal social network, with road shows, in monthly all-hands teleconference town hall meetings, and even with posters and other materials promoting IT's goals.

It was at one of the town hall meetings that he encountered a common cultural trap: What the speaker means isn't always what the listener hears. Danilewitz was discussing the need for

the unified IT department to come together behind common technologies rather than clinging to whichever apps they had been using before centralization.

To underscore the point, he noted, "We are providing a service and shouldn't think of ourselves as the only service provider available to the business. We have to hold ourselves accountable, because if we're too complacent, the business may look elsewhere for that service."

His words struck a nerve with one business unit's IT group. That group had been through downsizing in which many of its jobs were outsourced, and people feared that the same thing might be happening again.

"That was not my intent," Danilewitz says. "I had to recover and provide a better explanation."

It was a great illustration of how corporate culture affects perceptions without our being aware of it. "It's like an accent," he says. "You don't know you have one until you encounter a different one."

— MINDA ZETLIN

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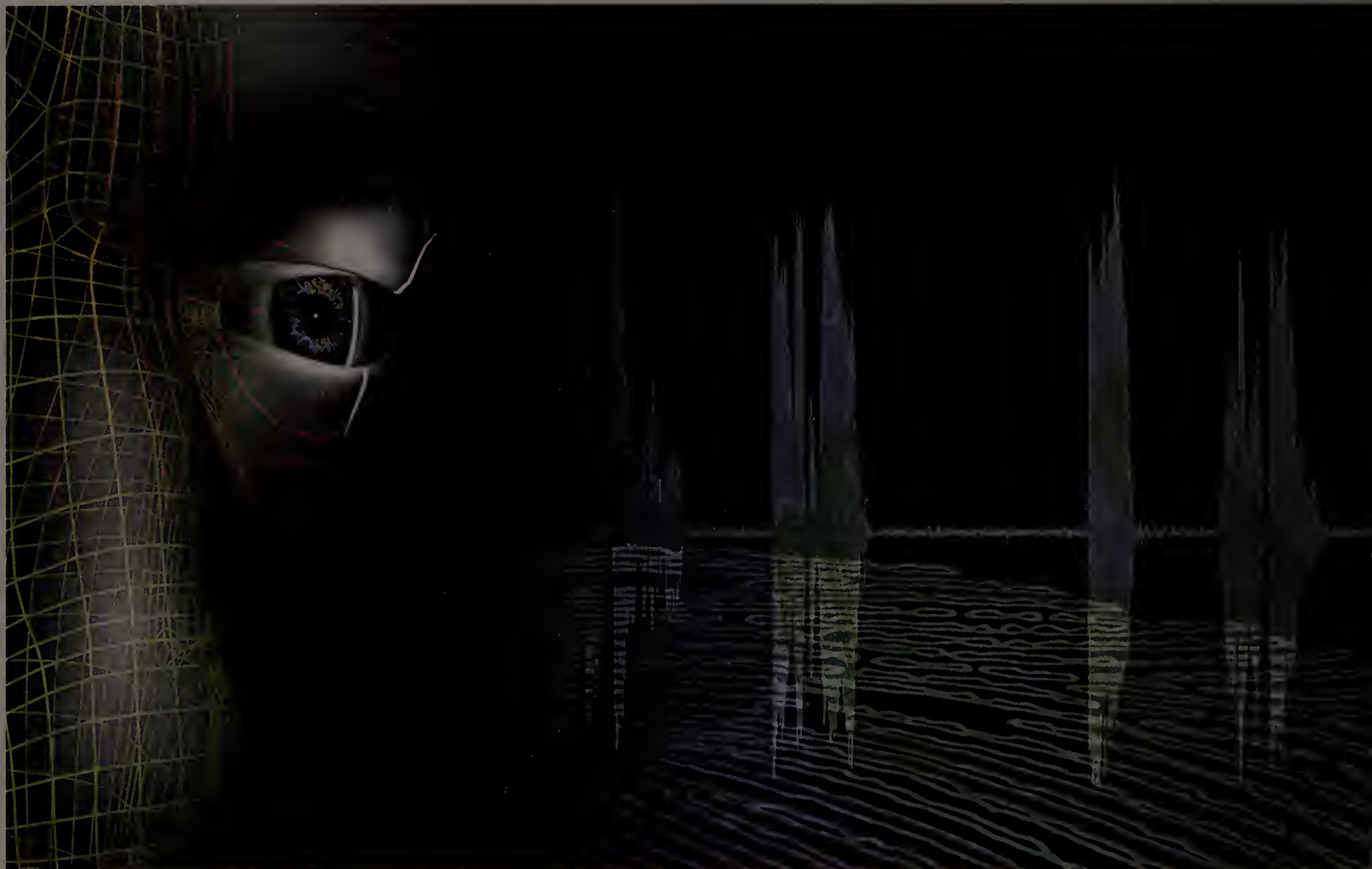
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FBI Gets Into Biometrics

Palm prints, iris images and mug shots join fingerprints in the FBI's database, helping to identify the bad guys.

BY ROBERT L. MITCHELL

N **EARLY 90 YEARS** after it began collecting fingerprints on index cards as a way to identify suspects, the FBI is moving to a new ID system that tracks more biometric features and is designed to be faster and more accurate than the existing setup. By adding the ability to search palm prints, faces and iris images, the FBI's Criminal Justice Information Services Division (CJIS) hopes to improve the accuracy of identity searches, make it easier to positively identify and track criminals as they move through the criminal justice system, and provide a wider range of tools for investigators at crime scenes.

To take full advantage of all of the new capabilities, however, federal, state and local law enforcement agencies may need to update their own systems to be able to capture the data, forward it to the FBI and search against the nationwide database.

"Most booking stations are starting to gather all of the modalities — fingerprints, palm, and face and iris," says Jon Kevin Reid, assistant section chief in the FBI's CJIS division. But many regional and local law enforcement systems don't yet capture all of that information, and local authorities will need to upgrade their own systems to reap the benefits from the new FBI system.

The current database, the Integrated Automated Fingerprint Identification System (IAFIS), includes fingerprint and criminal history information on 135 million people, as well as fingerprints of civil servants and other citizens who work in "positions of trust."

Since its launch in 2008, the \$1.2 billion Next Generation Identification (NGI) project has been incrementally replacing pieces of the aging IAFIS and adding new features (see timeline, at right).

To date, the agency has upgraded the hardware and software of the 10-fingerprint system and launched palm-print search capability. It's currently piloting facial recognition technology and hopes to deploy that system later this year. A pilot of iris recognition technology is expected to commence this summer.

"NGI is a seven-year program, and we're in the last year," says Reid. By the end of this year, the agency plans to have all new functions rolled out and the entirety of IAFIS decommissioned.

Mobile ID

The recently released mobile ID system is one of the more compelling aspects of the NGI project. It lets officers in the field use a handheld fingerprint scanner during a traffic stop and run a two-fingerprint check against the NGI's newly created Repository for Individuals of Special Concern (RISC).

That subset of the criminal master file includes "the worst of the worst," Reid explains, such as criminals with outstanding warrants, known sex offenders and suspected and known terrorists. Responses come back within six seconds, Reid says.

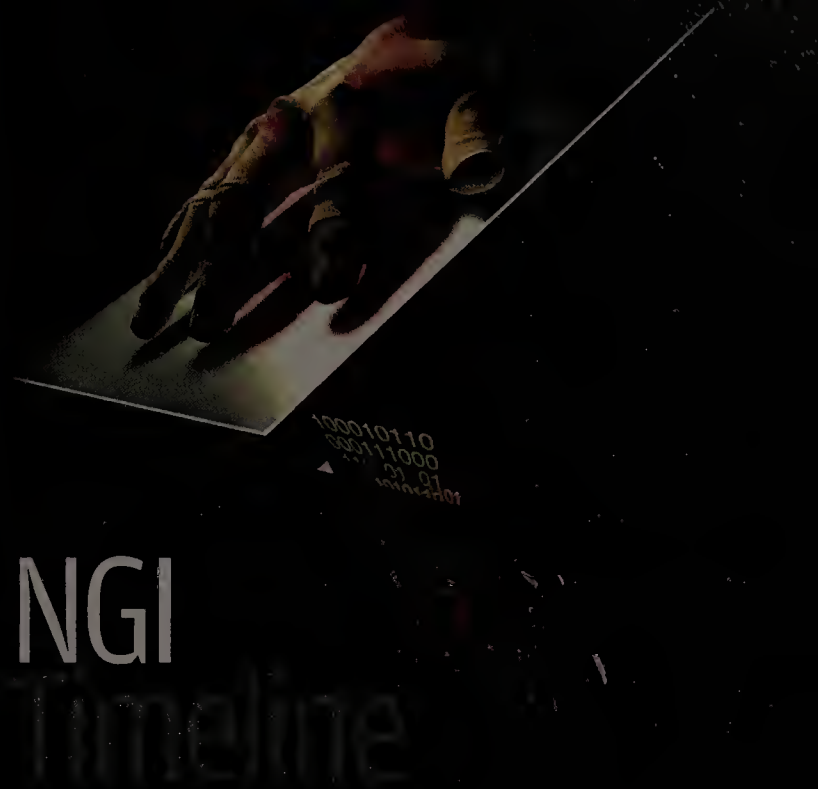
So far, 13 states are using RISC, and the state of Michigan is currently implementing it, says Scott Blanchard, manager of the automated print identification section at the Michigan State Police.

Core Upgrades

In the NGI setup, the 10-print system has also been improved; it now runs on a more powerful, 1,000-blade server farm — the old IAFIS system runs on 64 blades — and uses enhanced recognition algorithms. "NGI is faster, more accurate and has better process flows than IAFIS had," says Blanchard.

The accuracy rate of the matching system has risen from 92% to 99%, while the average response time has dropped from two hours to 10 minutes. "That changes the game at the local police station," says Art Ibers, director of the NGI program at government contractor Lockheed Martin.

But the time improvement is for matching fingerprints scanned under controlled conditions — at a police station, for example. Matching "latent" fingerprints — those found at a crime scene — is much more difficult. IAFIS had an accuracy rate of just 25% for latent prints. In contrast, the upgraded system rolled out as part of the NGI project in May 2013 has had an accuracy rate well above 80% for latent prints, due to an improved algorithm that takes advantage of more compute horsepower, Reid says.



NGI

Timeline

- The FBI makes its first foray into biometrics, with fingerprints on index cards.
- The agency launches its first computer system created to search fingerprint files.
- The Criminal Justice Information Services Division of the FBI debuts.
- The agency begins work on the Integrated Automated Fingerprint Identification System database (IAFIS) to automate fingerprint collection and retrieval.
- The IAFIS is fully deployed.
- Development of the \$1.2 billion Next Generation Identification (NGI) system begins.
- The CJIS delivers a more powerful computer system with a more accurate algorithm to match flat and rolled fingerprints to the criminal master file database.
- The FBI adds the Repository for Individuals of Special Concern, which includes "the worst of the worst" criminals, and launches a system that lets officers in the field use a mobile system to scan two fingers of a suspect and query the NGI system for a nearly instantaneous response.
- A pilot of the FBI's Interstate Photo System Facial Recognition technology begins in three states; the system allows searches against more than 15 million mug shots.
- A feature for matching "latent" fingerprints — the ones found at a crime scene — with those in the system is added to the NGI system. It's nearly three times more accurate than the version in the IAFIS. The FBI also launches a new palm-print database and search service, which handles 200,000 requests per day with a response time of 10 seconds or less.
- Facial recognition service to go live.
- Iris recognition pilot to launch.
- IAFIS system to be decommissioned.

— ROBERT L. MITCHELL

Using facial recognition algorithms to try to match images of suspects' faces in multiple photos is new:

The technology pairs photos taken at a police station or a crime scene with mug shots in the NGI database that have a high probability of being a match.



Going for the Palm

A national palm-print database, deployed in May 2013, should also help investigators because palm prints are left at the crime scene 30% of the time. "There will be significant leads around cold cases that we couldn't have gotten before," Reid says.

The state of Michigan has been taking palm prints for five years, but Blanchard says there have been a few kinks getting up and running with the new system. "The FBI has placed requirements on palm-print submissions that most states are not meeting," he says.

In a palm capture, NGI requires that the whole hand be captured, not just the palm. "They are trying to compare the fingers from the palm capture to the fingerprints that were rolled to make sure the palm matches the person. Many agencies aren't meeting that requirement. We are capturing just the palm, not the entire hand," Blanchard explains.

In some cases the biometric devices that local law enforcement personnel are using to collect data may need to be modified or replaced entirely. "Until this issue gets resolved, the usefulness of the palm database is limited," he says.

Many law enforcement computer systems are now playing catch-up, both for machine-to-machine data sharing between their own booking systems and NGI, and for workstation software that queries the NGI system. For example, the Western Identification Network, used by law enforcement agencies in eight states in the Northwest, doesn't yet support sharing of the new biometric data, and workstation software used by law enforcement in Seattle to search the new NGI database needs to be updated as well.

Current plans call for these features to be added over the course of this year.

"We are experimenting with workarounds" until the software is upgraded, says Carol Gillespie, manager of the King County Regional Automated Fingerprint Identification System in Seattle.

Recognizing Mug Shots

Mug shots have long been a staple of IAFIS, but the FBI's Interstate Photo System Facial Recognition pilot project, launched in February 2012 in three states, now lets participating law enforcement organizations use facial recognition technology to search against more than 15 million of those images. The system returns a ranked list of potential matches. It's expected to be fully deployed this June.

With IAFIS, matching was visual only. Using facial recogni-

tion algorithms to search for a match against another photo is new; it matches a photo taken at the booking station or at a crime scene with mug shots in the NGI database that have a high probability of being a match.

Facial recognition isn't nearly as accurate as fingerprint-matching for identifying individuals. "If you had a perfect gallery, it would be in the 80% range for matching," Reid says. But that's the best case. Most existing mug shots weren't taken with facial recognition in mind. The right pose and high image quality increase the odds of finding a match.

But image quality for mug shots varies widely, and when matching against crime scene evidence, such as images from security cameras, the accuracy degrades significantly from that best case.

Nonetheless, facial recognition is proving to be an effective tool during active investigations for the Michigan State Police. "The system has been very beneficial in attempting to identify unknown subjects who commit crimes of identity theft and fraud," says Pete Langenfeld, manager of the agency's digital image analysis section.

The response time for an inquiry has averaged less than three minutes, he says. And because the people who commit such crimes often cross state lines, investigators don't need to contact every jurisdiction to see if they have a facial recognition program. But, he cautions, "any candidate derived from a facial recognition search should be considered an investigative lead only, and not positive identification."

Experimenting With Iris Recognition

CJIS has been working with the Federal Bureau of Prisons and the National Sheriffs' Association to launch a pilot iris recognition project, but whether that technology will ever be included in the new NGI/IAFIS system is still undecided. "We know there are business cases, but is it something we want to support at the national level?" Reid asks. A formal pilot is expected to begin this summer, he says.

Iris recognition, while very accurate, is unlikely to supplant the well-established 10-print system for identification of suspects, and it's of limited use for investigations because, as Reid points out, "there isn't an iris left at the scene." So far, the best use of iris-recognition technology has been for tracking criminals as they pass through the criminal justice system. "Prisons like it because you can do it without having to touch the individual," Reid says.

The Michigan State Police aren't capturing iris images during booking, but Blanchard says they have been experimenting with the technology as a way to provide access to secure rooms. "It's more secure than access cards, and cleaner [and] less intrusive than fingerprints," he says. "If it's more efficient and cost-effective, we'll roll it out departmentwide."

Iris-recognition tools are more costly than other biometric systems, but prices have been coming down. And in some cases, Blanchard says, the added security and reliability may be worth the extra cost.

To date, NGI has been returning twice as many identifications as did the old IAFIS system. While Blanchard has been pleased with the new system's performance, he says it will take time for the majority of law enforcement agencies to get set up to collect and share the new classes of biometric data.

"It's a revolutionary change," Reid adds — one that should improve law enforcement's effectiveness, particularly when dealing with criminal activity that crosses state lines. ♦

Discussion Underway



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SHOULD
YOU
BE AN

SVP?

These days, some tech leaders are sporting more than one title on their business cards. We explore the ins and outs of adding a few letters after C-I-O.
BY STEPHANIE WILKINSON

TECH PROFESSIONALS are seeing new career paths open up as IT continues to move out of its service silo and into the red-hot center of business. One glance at the business cards of folks at the top of the ladder tells the tale: More and more often, that CIO title isn't standing alone. It's CIO and vice president — or senior vice president, executive vice president or even corporate vice president.

"IT is so important to the organization now, it's only natural that these multifaceted titles are taking hold," says Matt Ripaldi, SVP at Modis, an IT staffing and recruiting firm. "Job titles are also getting more specific. Nowadays you'll see 'SVP of infrastructure' or 'CIO of global support.' This trend just shows the centrality of IT."

At most organizations, these dual titles aren't just window dressing. Generally, they denote extra responsibilities, extra compensation and, most important, extra sway inside — and outside — the executive suite.

"The *and* means a lot," says Jean Holley, group SVP and CIO at Brambles, an international container logistics company. "When you have two titles and you're at the table, you're allowed to speak to things other than just IT. If you're 'just' the CIO, you're expected to speak to IT and that's about it."

Besides the personal benefits of adding VP to a job title — things like a salary bump and added areas of oversight — the ampersand on a business card helps establish rank inside and outside the organization.

Michael Reidenbach, EVP and worldwide CIO of EVO Payments International, a payment processing company, was a pilot in the Air Force before heading into the private sector with an MBA in finance and a master's degree in computer science. He says he reads titles on a business card the way he used to read stripes on a uniform.

"In the military, you walk into a room and instantly compare shoulders. The pecking order is immediately established. In a civilian organization, titles can do the same thing — establish who the decision-makers are," he says.

Like it or not, Reidenbach says, internal meetings have a different dynamic when decision-makers are in the room. "Ditto for third-party conversations," he says. "Vendors want to know who has the authority to write checks and sign contracts. Everybody wants to deal with the most senior person they can."

Climbing the SVP Ladder

Growing into a senior role happens in a variety of ways. Some work toward a role that has a fixed and long-standing status in a company. For others, shifts in HR or C-suite thinking open up new titles.

Sam Chesterman, worldwide CIO and SVP at IPG Mediabrands, a global media holding company, has

worked in IT in a variety of organizations, including Morgan Stanley.

At IPG, Chesterman rose from SVP and director of technology to CIO when his predecessor left and the company decided it was time to thin out and streamline what he calls “a crazy proliferation of titles” — primarily “director” and other managerial monikers — caused by a series of mergers and acquisitions.

Today, instead of hiring someone into the role of senior director, he or she is hired as a VP, Chesterman says, which helps clarify the role out in the marketplace. “If you talk to an HR person, they’ll tell you that there are levels and titles,” he says. “Levels have to do with determining pay grade. Titles have to do with the business card you hand to customers. They’re the business-facing piece.”

That business-facing relationship can be complicated for multinational companies. Outside of the U.S., a title of “director” or “managing director” carries the clout that “SVP” carries in the U.S.

“When I sit in front of clients, like Chrysler or Johnson & Johnson, they focus on the SVP or the CIO title,” Chesterman says. “If it’s Unilever in the U.K., they want to see you have director in your title. Still, I don’t typically put SVP on my business card — worldwide CIO is a multinational title and carries that weight.”

Michael Pitt started out in the 1980s as a system programmer on mainframes, and his career path led him to application programming and then to project management. With each step, he felt respect for his skills grow. He moved to a new company, where he became a senior principal; at his next job, he was VP of IT solutions and services. Today, he’s director of consulting and VP at CGI Federal, the U.S.-based arm of CGI Group, a Canadian IT consulting and outsourcing giant.

“My own path was pretty straight, but I’ve known people go from a large company to a smaller company to take a better title, then move from a smaller company to a medium or larger company in order to take on more responsibilities,” Pitt says. “These are trade-offs that make sense.”

CGI pursued Pitt for nine years, he says. He finally accepted the company’s offer to become a vice president last summer. He took the job for the usual reasons — broader benefits, better compensation and a better retirement plan — but the biggest lure was the growth potential inherent in taking on more profit-and-loss responsibility. “I’m a VP reporting to an SVP who reports to the CEO,” Pitt says. “If my next move is CIO somewhere, this will put me in a good light.”

Dual-track Career Planning

When it comes to career planning, Holley has always taken the long view. As a pioneer among women in IT and engineering, she set out 30 years ago to build a career that would advance along a dual track.

“When I went into engineering, I made it a goal of mine to hang out with non-engineers and to learn from everyone I could on the business side,” Holley says.



When you have two titles and you’re at the table, you’re allowed to speak to things other than just IT.

JEAN HOLLEY, GROUP SVP AND CIO, BRAMBLES

“People looked at me cross-eyed. I recognized that I wanted to run an overarching information systems organization, and that that was really a business leader’s job. It was pretty ‘out there’ at the time. Plus I was a woman.”

Holley progressed from a job in the steel industry to one in high-tech consulting, then went on to a nine-year stint at Waste Management Inc. From there, she became the CIO at USG, a big construction materials company, becoming its first corporate CIO and the first woman to be an officer of the company. In her past four positions, she’s held dual titles that included EVP, SVP and group SVP.

In addition to pursuing a broad base of learning and a diversity of experience, anyone interested in a dual role should find a mentor, Holley says. “You want someone who is on a different ladder, not someone who is one or two rungs above you on the same ladder,” she says. For her, that was the head of sales at Waste Management, a man she met in the



I didn't wake up every morning and say, 'How do I get a job as a VP?' It was always, 'How do I make life interesting?'

MIKE CAPONE, CORPORATE VP AND CIO, ADP

middle of her career. "We were opposites, but we both stretched the other out of our comfort zones."

In today's labor market, there's more freedom to negotiate titles than there was in the past, says Suzanne Fairlie, president of ProSearch, an executive search firm based in Philadelphia. She recalls a recent placement she facilitated for a midsize multi-state company. The candidate under consideration, who would be reporting to the CFO, was offered a job as VP of IT. The candidate wanted the position but held out for CIO to be added to his title. "The job was the same," Fairlie says. "But having the dual title made all the difference."

Ripaldi sees companies becoming more amenable to such title negotiations. "We're in the midst of a talent war," he says. "With the booming market and people landing multiple job offers, you'll see companies getting more flexible with titles."

But companies that don't institute clear rules for

titles can end up with trouble on their hands, Ripaldi adds. "Without a disciplined approach, employees can get distracted, and that leads to low productivity and low morale," he says. Like karate belts, job titles should follow a clear progression that's "well thought out and clearly communicated," he says.

Ripaldi notes that older, more staid professions like finance and manufacturing tend toward more rigid job title structures. Newer industries, including tech-based fields, often take a more fluid approach to titles — with some organizations forgoing titles altogether. However, as industries progress, titles tend to "grow up," he says — people like and need to know where they stand in relation to one another.

To some people, however, fussing over titles is just a distraction.

"Titles are overrated," says Sean Chatterton, VP of digital development at Direct Brands. His path to VP-dom came as part of a larger management transition. In 2008, a shuffling of leadership created a VP title where none had existed before. His business card changed — formerly, he'd been associate director — but his role and responsibilities didn't.

Or at least, not immediately. "When I got the VP title, frankly, it was a little inflated," Chatterton says. "But now the job has grown."

In the end, however, Chatterton says the information conveyed by a few letters tacked on after a name is meager compared to what you can find out by taking "one minute to look at a résumé and see what someone has actually done."

"If someone is in charge of IT, they're a significant player in strategy and tactics. I don't think tacking on an SVP title changes anything," Chatterton says. "But if you have institutional issues, where IT is just a service and not integral to the business and part of every strategy meeting, that won't be fixed with a title change. It will be fixed with leadership."

Mike Capone would agree: Having a double-barreled title is all to the good — but only if you're deploying both of them to the same end. Capone, currently corporate vice president and CIO at ADP, started his career as a programmer. But he knew that his ultimate goal was, as he puts it, "to become a business-focused IT professional."

"I didn't wake up every morning and say, 'How do I get a job as a VP?' It was always, 'How do I make life interesting?'" Capone says. After earning an MBA at night, he went to work at a branch of ADP implementing Oracle Financials Accounting systems. He spent 15 years in IT, then left to become a general manager for global outsourcing with the title senior vice president. It all came together in 2008 at ADP when he was offered the role of corporate VP/CIO.

"The bottom line," Capone says, "is that your capability in a company isn't judged by how many servers you manage. Your credibility comes from your ability to leverage IT for the business." ♦

Wilkinson is a freelance writer in Lexington, Va.

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Security Manager's Journal

MATHIAS THURMAN

Who's Calling, Please?

An open port results in thousands of dollars in charges for international calls. Management hates that sort of thing.

AS A security manager, I expect my company to be hit by malware infestations, data theft, denial-of-service attacks and attempts at unauthorized access. I deal with them all as they arise, and they do keep things interesting.

But some incidents get attention not just from me, but also from management. Those tend to be incidents that result in the direct loss of either money or extremely sensitive data. Naturally, those are the types of incidents that I most want to prevent, interesting or not. And things quickly go from interesting to frustrating when you get hit with the same type of security event resulting in dollar loss several times in one year.

Last week, a financial analyst who processes payments for the IT department told me she had received an alert from our telecommunications provider that several thousand dollars in charges for phone calls to Costa Rica, Bolivia and Colombia had been racked up in less than a day. Since we don't typically do business in any of those countries or place several thousand dollars' worth of international calls in less than 12 hours,

some sort of breach seemed likely.

But how? Just a few months ago, our phone system had been compromised, and my team had spent weeks working with our in-house telco department on finalizing and deploying a secure configuration to our IP telephony gateways. I had complete confidence in our gateways' security. So what had happened?

When I talked to our telco manager about the latest batch of long-distance charges, he had a dawning suspicion of what might have happened. And a little bit of digging proved his suspicion to be correct.

A contractor had been working on a new videoconferencing infrastructure, including

a server residing in our DMZ for handling video calls to and from remote locations. People from our company had provided oversight. The architecture review board had held several sessions with the vendor to ensure that it was following a secure policy and configuration. The vendor's compliance had been verified several times during the deployment. Nonetheless, a review of the current configuration of the videoconferencing server (VCS) showed that the consultant had made a

the discussions about security! computerworld.com/blogs/security

Trouble Ticket

» The company has been charged thousands of dollars for calls to Latin America.

» Find out how the telephony gateway was compromised, seal it and recoup the losses.

configuration change, opening up Port 5060, Session Initiation Protocol and other control ports to the Internet, with no authentication required.

We Will Not Accept the Charges

We had the consultant immediately close off the vulnerability to prevent any new unauthorized calls. Then we began sniffing the network connection to the VCS and looking at its connection state table. And what do you know: We discovered hundreds of connection attempts from servers in places that included Costa Rica, Bolivia and Colombia.

Clearly, while our telephony gateway sat naked on the Internet, someone had scanned our IP address space (an activity that we have found to be constant) and discovered the open port. It was a simple matter after that for that person to point his own IP gateway to our infrastructure and route calls through us. Such activities can be profitable. They can be done with free, open-source PBX software such as Asterisk or SIP Witch. Once an open and unauthenticated port has been found, the bad guys can either sell the discovery to others, who can then make a free connection, or sell discounted minutes.

So we were able to plug a hole that had cost us several thousand dollars, but management wouldn't really be happy unless we could recoup those losses. Our telco provider wasn't encouraging. It said our losses didn't justify the resources necessary to conduct an investigation and a hunt for the bad guys. The consultant, on the other hand, has acknowledged its error and has promised to reimburse us. ♦ This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com.

A consultant had made a configuration change, opening up ports, with no authentication required.

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— OPINION

PRESTON GRALLA

With Comcast Deal, Say Goodbye to Open Internet

Comcast will have little reason to increase speed or lower the cost of broadband.

I F THE FEDERAL COMMUNICATIONS COMMISSION allows Comcast to buy Time Warner Cable, you can kiss any dreams of truly high-speed access to an open Internet goodbye. The Internet will be a far poorer place. And Comcast will be a far richer company.

There's already little broadband competition in the U.S., and this deal will all but kill it. Susan Crawford, a professor at the Benjamin N. Cardozo School of Law and a visiting professor at Harvard Law School who has studied broadband competition, is a harsh critic of the proposed buyout. In an article for Bloomberg, she writes, "The reason this deal is scary is that for the vast majority of businesses in 19 of the 20 largest metropolitan areas in the country, their only choice for a high-capacity wired connection will be Comcast."

With little or no competition, Comcast will have little reason to increase the speed or lower the cost of broadband. And we need faster, cheaper broadband; the U.S. lags behind many countries in both areas. Akamai says that the average broadband speed in the U.S. is 7.4Mbps, only eighth in the world. And at an average price of \$6.14 per Mbps, our broadband access is one of the most expensive in the developed world.

Comcast has already begun introducing broadband data caps, charging higher rates when those caps are exceeded. With the reduction in competition that will ensue from a Time Warner buyout, those caps won't go away.

Speed and price aren't the only concerns. Internet openness is also endangered. A U.S. court of appeals has already struck down FCC rules guaranteeing Net neutrality, which requires that ISPs treat all Internet traffic equally. Competition might keep companies from offering speedier access to websites willing to pay more and slowing down access to websites that don't cough up, but where will competition come from if this buyout goes through?

Comcast would have such a dominant position that it could even black out websites if negotiations go poorly, taking a page from its buyout partner, Time Warner Cable, which blacked out CBS broadcasts for New York subscribers for weeks until it settled a contract disagreement with the television network.

When Comcast purchased NBCUniversal, it signed a consent decree with the FCC to adhere to Net neutrality, but only until 2017. After that, Comcast is free to do what it wants. Without any real competition able to offer customers an alternative, what chance is there that Comcast will stick to that agreement a minute longer than it has to?

I keep saying "if" this buyout goes through, but it's practically in the bag. Comcast has spread its tentacles deep into Washington's power centers. Meredith Attwell Baker, a onetime FCC commissioner who voted to approve Comcast's merger with NBCUniversal, is now a Comcast lobbyist. *The New York Times* reports that Comcast spent \$18 million on lobbying in 2013 alone, that Comcast CEO Brian Roberts has golfed with President Obama and that Obama has visited Roberts' home on Martha's Vineyard. David Cohen, who heads Comcast's relationship with government regulators, has been a big Obama fundraiser, once hosting an event at his home that raised \$1.2 million. Cohen was also recently a guest at a White House state dinner for French President François Hollande.

Still, the deal isn't done yet. Luckily in this case, the wheels of government grind slowly, and it could take up to a year before the FCC rules on it. It's a year that opponents should use to do everything they can to stop it. ♦

Preston Gralla is a *Computerworld.com* contributing editor and the author of more than 35 books, including *How the Internet Works* (Que, 2006).



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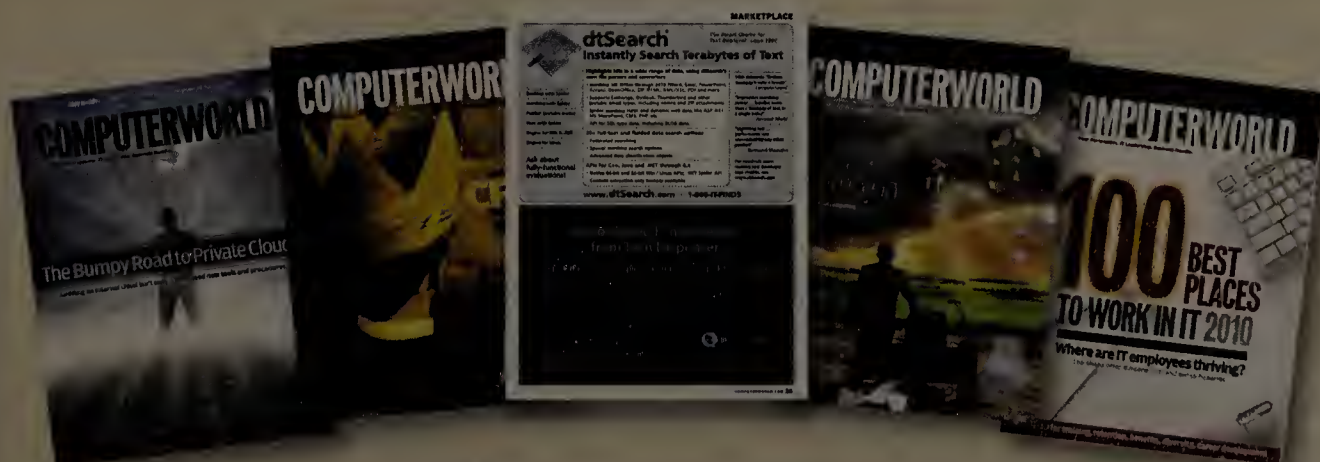
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Computerworld May 10, 2010

Career Watch

vertical industries such as healthcare, retail and energy.

I was recently promoted to desktop support analyst and will be analyzing and managing security, performance, procedures and vendors at the desktop level. I feel pretty confident that this is something I can happily do for years to come, but I'd like some assurance that it could lead to other things should I ever decide to move on. That is great to hear about your promotion! And it is also very good that you are already thinking about what could be next for your career. Technology professionals, faced with many choices of specialties, need to focus on their own development. Security is a skill that is always in demand, and opportunities in this field are growing. The rapid evolution of areas like mobile, cloud and social media mean the threats, and the ways to protect against those threats, are changing rapidly. Your current position could lead to other opportunities, particularly with security and vendor management, since the traditional IT function must manage its many arrangements with third parties, particularly cloud providers. Managing service-level agreements and understanding how to actively engage with a provider are strong skills to build upon.

What is the best way to keep up to date on regulations that affect IT? Another good question about taking charge of your career! IT operations is a great field to focus on, since it provides an overview of the day-to-day activities involved in running an IT enterprise. While much energy and focus are devoted to systems development, if systems don't operate and run effectively, they will ultimately not deliver the value needed. Since IT systems are now very integral to the core operations of many businesses, the need for skilled operators has grown. The best way to stay up to date on regulations that affect IT operations is to meet with co-workers who deal with regulations — people from legal, human resources, internal auditing and risk management. These folks will be able to help you not only focus on what needs to be understood from an operations standpoint, but also understand how the regulations have been applied and interpreted for your company.



ASK A PREMIER 100 IT LEADER

Richard Maranville

The CIO at Freeman says
data is a great focus for an IT career.

As I enter my final year of studying for a computer science degree, what specific technologies should I be concentrating on? Congratulations on getting to your final year! I would recommend focusing on data design, databases, business intelligence, etc. Data management has always been at the heart of software, and its importance is only growing as companies struggle to manage and harvest ever-increasing volumes of data brought about by advances in applications and technologies like social media, mobile computing and sensors. Data management skills are also portable across technologies and companies, especially within

If you have a question for one of our Premier 100 IT Leaders, send it to askaleader@computerworld.com, and watch for this column each month.

New Grads See Pay Slippage...

Starting salaries for recent college graduates with computer science degrees slipped a bit in 2013. The National Association of Colleges and Employers (NACE) reports in its January 2014 Salary Survey that the overall average starting salary for new graduates rose 2.6% from 2012. But for those with computer science degrees, the average starting salary went from \$59,221 in 2012 to \$59,034 in 2013, a drop of 0.2%.

... But Money Isn't Everything

One-fourth of all IT professionals plan to change jobs this year, according to a CareerBuilder.com survey, but they aren't necessarily seeking more money. The list below shows the percentages of IT workers who ranked the following factors above pay when asked what was important to them:

- Job stability: 69%
- Location: 64%
- Good work culture: 60%
- Affordable benefit plans: 57%
- Good career advancement opportunities: 40%
- Ability to telecommute: 40%
- Ability to work flexible schedules: 40%
- Learning opportunities: 40%

SOURCE: CAREERBUILDER.COM ONLINE SURVEY OF 199 FULL-TIME IT EMPLOYEES, DECEMBER 2013

10

What the 100th Premier 100 IT Leader says about the future of IT jobs, career paths, and the challenges ahead. This is the 10th in a series of 100 columns.

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Product Manager (Mountain View, CA) **#1615.3190**: Take responsibility for Google product from conception to launch. Exp. Incl: dev of product strategy; dev & design of product; programming web interfaces; UIs; creation of product offerings & tech & strategic analysis of product offering improvements: C++ & SQL; database design; & machine learning statistical analysis methods. Trvl R'qrd.
Corporate Operations Engineer (Mountain View, CA) **#1615.1678**: Design, develop, and support Google's information technology architecture. Exp. Incl: maintenance & troubleshooting of desktops, laptops, & various networked devices; installation, upgrade, & decommission of comp hardware & network equipment; supporting various operating systems & scripting.
Software Engineer positions (Mountain View, CA): Design, develop, modify, and/or test software needed for various Google projects. Exp. Incl:
#1615.5024: Java; multithread; Eclipse plug-in dev; OO design; XML; UI dev; profiling & debug tools; & unit, perfor, & functional acceptance testing.
#1615.528: Irg-scale distrib sys; algorithm dev; C &/or C++; & Mapreduce & Flume. Trvl R'qrd.

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Software Engineer Positions (New York, NY) Design, develop, modify, and/or test software needed for various Google projects. Exp. Incl:
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#1615.1228 C++; Linux; multi-threading, parallel programming, & distrib comp; OO dev; web techs; databases & SQL; distrib syst simulation & perfor analysis; & design & dev of fault tolerance & recovery methods for distrib sys.
#1615.6125 C++ &/or C#; Irg-scale data indexing; info retrieval; parallel & distrib comp; & sw design & arch.
#1615.6640: Python & bash scripting; C++ &/or Java; op sys; design of dist sys; web dev tech, incl Javascript, HTML, & CSS; & network topologies, sys, & mgmt.
#1615.4698 C++; algorithms & data strctrs; abstract mathematical analysis; probability; mathematical modeling; & numerical data analysis.
#1615.6122: Java; C++; Mapreduce; Irg scale distrib data sys processing; database & SQL; data strctr; & algorithms.
#1615.4984B C++; Java; & Python; design & dev of Irg-scale distrib sys; mgmt & execution of UNIX or Linux servers in datacenter environments; SQL & relational databases; & dev of multi-thread programs.
#1615.3927: multi-thread program.; C, C++, STL, or Java; Python or Bash; data mining lang, such as Sawzall, &/or data analysis lang, such as Matlab or R; machine learning, info retrieval, data mining, or natural lang processing; perf tuning & debugging; dist computing workflows, such as MapReduce or Hadoop; & design of controlled exp & exp data analysis.
DBA Manager (Mountain View, CA) **#1615.4885**: Manage databases and database applications needed for various Google projects. Exp. Incl: RDBMS admin w/ Oracle, Microsoft SQL Server, & MySQL; Unix &/or Linux shell scripting; C &/or C++; Perl, Python, Java, SQL, & PL/SQL; data arch leadership in designing & tuning of highly scalable OLTP & reporting solutions; relational database concepts; syst admin & syst internals; dev methodologies & project life cycles; admin of Oracle Applications, Hyperion Planning, Hyperion Financial Management, or Oracle SOA Suite; mgmt of DBA & eng'g teams; & personnel mgmt, including hiring, performance reviews, & dismissals.
Technical Solutions Engineer (Mountain View, CA) **#1615.6956**: Design, develop, modify, and/or test software needed for various Google projects. Exp. Incl: multi-thread program or distrib comp; web app dev or mobile dev; Java, Python, C, C++, or (JScript & HTML); database mgmt or data handling; Linux, Windows, or Unix; app program interface design; OOP; & data strctrs & algorithms.

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Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 Attn: D. Racherla. Please reference job # below:
Software Engineer (San Bruno, CA) **#1615.7068**: Design, develop, modify, and/or test software needed for various Google projects. Exp. Incl: C, C++, or C#; scripting lang, such as Java, Python, or PowerShell; sw testing methodologies; distb sys & cloud comp platforms; automation tools; scalability & perf testing; & data strctrs & design patterns.

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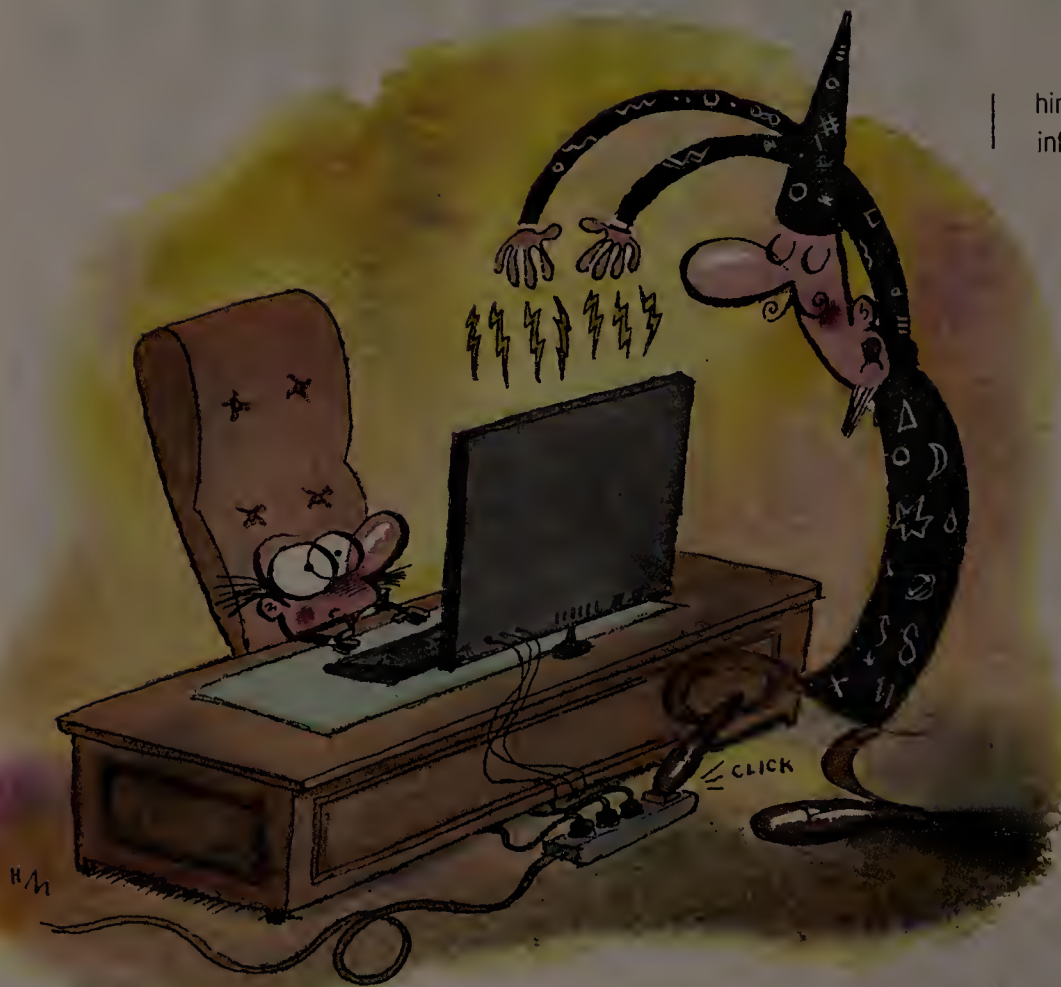
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HAL MAYFORTH

Abracadabra!

IT supervisor at this government office retires, and the head of finance steps in as interim IT boss. "It was a rather contentious change of command," says a pilot fish working there. "One morning, the new boss called and said that his computer was dead. Trying not to offend him right off the bat, I said, 'I won't ask if it's got power, since I'm sure you've already checked that.' As I walked into his office, I could see that the light was off on the power strip under his desk. I approached his desk, laid my hands on the monitor, closed my eyes and hummed. And turned on the power

strip with my foot. The monitor came on and the computer began restarting to its last known state. I opened my eyes to my new boss's look of amazement. But I couldn't keep a straight face — I had to 'fess up to what I'd done. He bought the coffee."

Value, Redefined

College intern pilot fish is working for a self-contained subsidiary of a

midsize company. "In short, I was the IT department," says fish. "It was around 11 p.m. on a Friday, and my phone rang. One of the attorneys was working late and was panicked because he couldn't print. For some reason, he only had one printer configured on his PC, but I asked him to go read the LCD display on that printer. His response? 'It says, *TRAY 1 LOAD LETTER.*' When I tried to walk

him through the necessary steps, he informed me that he was an attorney and his time was too valuable to waste on administrative tasks. He demanded that I make the 25-minute drive to the office to load the paper. I just hung up on him. I guess he gave up and went home, because he was reprimanded for missing a deadline."

If Only They Got an Out-of-Office Notice

Pilot fish at a software company who's getting ready to take time off to have back surgery can't get his email's out-of-the-office message to work. "I kept getting errors," says fish. "I called our help desk number and was sent to our outsourced help desk. I spent two hours on the phone with them. They used WebEx to control my machine and were unable to fix the issue. I left for the surgery and returned four weeks later to find my trouble ticket was closed — for lack of response while I was gone. I gave them a call back, got a new ticket and a different offshore tech, and spent another two hours on the phone and WebEx, but he was unable to get it fixed. I was finally able to convince them to send a local tech. He had it fixed in five minutes. I should track him down and make note of the solution. We have new management, and they're working on bringing some of the outsourced IT work back in-house."

» **Sharky is in.** Send me your true tale of IT life at sharky@computerworld.com. You'll score a sharp Shark shirt if I use it.

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— OPINION

THORNTON A. MAY

Reflections on Inflections

Every day, executives confront a series of inflection points, where received wisdom is inadequate.

BOARDS OF DIRECTORS, CEOs and politicians these days are much concerned with optics, the way things look. It's understandable. We live in a world where everything is recorded or recordable, where every gesture, physical or digital, can be analyzed and

commented upon, where there is no such thing as a dead mic or a truly off-camera moment.

I am the first to admit that appearances matter a great deal. (For example, I am rarely seen not wearing a bow tie.) But being cognizant of the way things look will only get you so far. To truly accomplish things, you have to be on top of the way things really are. You can have great optics and still be clueless — an epithet that's about as bad as it gets today.

When I say that you have to be on top of the way things really are, I mean you have to comprehend what is actually happening, why it is happening and what efficacious alternatives are available to us. Upon studying executives who never seem to be caught unawares, I have concluded that the secret to their sagacity is their true and deep understanding of the inflection points that define modern existence.

Inflection points (the term is borrowed from differential calculus) are all about change. Our field's most respected thinkers (such as Erik Brynjolfsson and Geoffrey Moore) and its most admired practitioners (the likes of Jamie Miller, Greg Simpson and Alan Kocsi at General Electric; Gary King at T-Mobile; Tomas Soderstrom at NASA JPL; and Vince Kellen at the University of Kentucky) focus on inflection points.

Former Intel Chairman Andy Grove said that an inflection point "occurs where the old strategic picture dissolves and gives way to the new." This seems to be happening with disconcerting regularity. Every day, contemporary executives confront a series of inflection points — situations in which received wisdom is no longer adequate

or appropriate for the task at hand. François Hollande became the president of France on the promise of being "Mr. Normal." His record-setting low popularity suggests that, at least in France, there is no place for normal, as *The New York Times* put it. That may be true everywhere.

My colleagues and I at the IT Leadership Academy are in the process of researching the efficacy with which organizations lead through inflection points. We began by asking executives a series of simple questions:

- When was the last time you used the phrase "inflection point" in a sentence?
- When was the last time you heard the phrase "inflection point" used in a sentence?
- When you hear the phrase "inflection point," what is the first thing that comes to mind?

The responses indicate that in most organizations there is not much reflection about the implications of inflection points. This is a bad thing. The deepest thinkers throughout history have understood that the defining characteristic of the human condition is change. The pre-Socratic philosopher Heraclitus counseled those who longed for a routine, predictable and never-changing world that they could not "step in the same river twice." Aristotle was a bit more straightforward, telling us, "Nothing is absolute. Nothing is permanent."

Another of the ancients, the Stoic Epictetus, provided relevant-for-today guidance when he advised his fellow Romans not to try to control what you can't control: "Seek to be in control only of what you are able." But here's the thing: Great leaders are able to imagine and hence control what is on the other side of the inflection point. ♦

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